REMARKS

Claims 17-20 have been canceled, claim 1 has been amended, and new claims 21 – 24 have been added. Thus, claims 1 – 16 and 21 - 24 are presented for examination. Applicants respectfully request allowance of the present application in view of the foregoing amendments and the following remarks.

Response to Objection to the Drawings:

The Examiner objected to the Figure 1 drawing, contending that it should be designated by a legend such as "prior art" because "only that which is old is illustrated." Applicants respectfully submit that that Figure 1 discloses not merely only that which is old, but rather a limitation to its claimed invention – a combustion turbine component having damage located at or near a cooling hole or hollow or geometrically complex portion of the component. Moreover, Applicants respectfully note the both patents that the Examiner cites (Frazer Fig 9 and Saltzman Fig 1) include damaged component Figures that do not indicate "prior art". Notwithstanding, if upon reconsideration, the Examiner insists on Applicants identifying Figure 1 as "prior art", Applicants will do so.

Response to Rejection Under Section 112:

Claims 1-16 stand rejected under 35 U.S.C. § 112 second paragraph, the Examiner contending the claims indefinite as filed.

The Examiner contends that the limitation "forming a preparatory groove that extends from a surface of the component to the damaged area" in lines 4-5 of claim 1 is unclear because as shown in Figure 1, the damaged area is at the surface of the component. Applicants respectfully submit that Figure 1 shows the damaged area extending vertically from near the cooling channel 14 to the component surface. This is explained at p. 5 lines 22-25 of the specification, as amended. Applicants respectfully submit that the limitation is now sufficiently described in the figures and specification.

The Examiner also contends that the limitation "but does not extend to the cooling hole or geometrically complex portion of the component" in lines 5-6 of claim 1 is inconsistent with the specification which shows in Figure 2 that the groove extends to the cooling hole 14.

Applicants respectfully submit that Figure 2 shows that the groove 18 extends near but not to the cooling hole (see space between the groove 18 and cooling hole 14 in Figure 2). This is explained at p. 6 lines 22-25 of the specification. Applicants respectfully submit that the limitation is consistent with the figures and specification.

The Examiner also contends that the limitation "geometrically complex portion" is vague and indefinite because it is unclear what "geometrically complex" means, and gives an example that the square grooves 14 could be considered to be a simple geometric shape and not a geometrically complex shape. Applicants respectfully submit that the term "geometrically complex" is defined at p. 6 lines 17-21 of the specification, and such definition clearly teaches that the cooling holes 14 do not constitute a geometrically complex shape.

The Examiner also contends that the limitation "the groove extending 40-90% the distance from the component to the damage area" in lines 6-7 of claim 1 is unclear. Applicants have amended claim 1 to clarify this limitation by reciting specific start and stop locations from which the groove can be measured, and respectfully submit that the limitation is now clear.

Response to Rejections Under Section 103:

Claims 1-16 stand rejected under 35 U.S.C. § 103(a), the Examiner contending that these claims are obvious over Fraser (USPN 4,611,744) in view of Saltzman (USPN 4,878,953). The Examiner contends that Fraser discloses the claimed invention except for the micro-plasma torch at a current of less than 50 amps but that Saltzman teaches this micro-plasma torch element.

Fraser addresses the problem of premature blade cracking due to stress corrosion of previously repaired blades. Col. 2 lines 28-44. Fraser teaches solving this problem by a controlled preheating of the cracked blade prior to repair via heating mats 70, 71, 72 and 73 as well as a controlled reduction of the heat after repair. See e.g., col. 3 lines 10-19 and 34-44, Col. 10 40-43. Importantly, Fraser teaches that the premature blade cracking due to stress corrosion occurs at a leading edge 17 of the outer end of the blade and extends into the interior of the blade. See e.g. Figures 2-3 and col. 2 lines 45-55; Figure 8 callout 66; Figure 9 callout 111. In contrast, claim 1 recites that the combustion turbine component has damage located at or near a cooling hole or hollow or geometrically complex portion of the component. Saltzman also does not teach or suggest this claim limitation. See e.g. Figs 1 and 4.

Applicants claims further recite forming a preparatory groove extending 40-90% the distance from the surface of the component to a portion of the damaged area that is closest to the cooling hole or geometrically complex portion of the of the component. The cited art does not disclose or suggest this limitation.

Applicants also respectfully submit that the cited art does not teach or suggest the limitations in dependent claim 2 (damage located at a cooling hole), dependent claim 3 (damage located near an area of spallation), dependent claim 4 (damage located near a geometrically complex area of the component).

Therefore, Applicant respectfully requests that the Examiner withdraw the Section 103 rejection and allowance of claims 1 – 16.

Discussion of New Claims 21-24:

New claims 21 - 24 further define the scope of the invention, as described in the specification and drawings and are patentable based on their dependency from the independent claims as well as on their own merit. For example, claims 22 and 24 recite that the width of the preparatory groove is substantially constant along the length of the groove. Applicants respectfully submit that claims 21 - 23 are patentable and respectfully request allowance of claims 21 – 23.

Conclusion

The commissioner is hereby authorized to charge any appropriate fees due in connection with this paper or credit any overpayments to Deposit Account No. 19-2179.

Respectfully submitted,

Dated: 4/14/06

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